CLAIM AMENDMENTS

1. (Currently amended) A method for enhancing bone density or formation, the method comprising administering to at least one first cell within a bone or within a tissue immediately surrounding a bone an adenoviral vector comprising at least one first nucleic acid encoding a vascular endothelial growth factor, wherein the vascular endothelial growth factor is selected from the group consisting of VEGF 121, VEGF 165, VEGFA 138, VEGFA 162, VEGF 182, VEGF 189, and VEGF-C, such that the first nucleic acid is expressed in the cell to produce the vascular endothelial growth factor, whereby bone density or formation is enhanced within the region.

2. (Previously presented) The method of claim 1, wherein the adenoviral vector is exposed to at least one cell in vivo in the region of the bone.

3. (Previously presented) The method of claim 1, wherein the adenoviral vector is exposed to at least one cell ex vivo, which is then delivered in vivo to the region of the bone.

4. (Previously presented) The method of claim 1, wherein the vascular endothelial growth factor is VEGF 121.

5. (Canceled)

6. (Previously presented) The method of claim 1, further comprising administering to at least one second cell within the bone or within a tissue immediately surrounding the bone an adenoviral vector comprising at least one second nucleic acid encoding at least one osteogenic protein, such that the second nucleic acid is expressed in the cell to produce the osteogenic protein.

7. (Previously presented) The method of claim 6, wherein the osteogenic protein is selected from the group consisting of a bone morphogenic protein (BMP), a transforming growth factor (TGF), a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a fibroblast growth factor (FGF), an epidermal growth factor (EGF), a platelet-derived growth factor (PDGF), an insulin-like growth factor,-a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

8. (Original) The method of claim 6, wherein the osteogenic protein is selected from the group consisting of BMP-2, BMP-3, BMP-4, BMP-5, BMP-6, BMP-7 and BMP-8.

9. (Original) The method of claim 6, wherein the osteogenic protein is TGF-β1.

10. (Original) The method of claim 6, wherein the osteogenic protein is BMP-2.

11. (Original) The method of claim 6, wherein the osteogenic protein is MK.

12. (Original) The method of claim 6, wherein the osteogenic protein is HBNF.

13.-16. (Canceled)

17. (Previously presented) The method of claim 6, wherein the first cell and the second cell are the same cell.

18. (Previously presented) The method of claim 6, wherein the first nucleic acid and the second nucleic acid are the same nucleic acid.

19. (Currently amended) An adenoviral vector comprising at least one first nucleic acid encoding a vascular endothelial growth factor and at least one second nucleic acid encoding at least one osteogenic protein, wherein the vascular endothelial growth factor is selected from the group consisting of VEGF 121, VEGF 165, VEGFA 138, VEGFA 162, VEGF 182, VEGF 189, and VEGF-C.

20. (Canceled)

21. (Original) The adenoviral vector of claim 19, which is deficient in at least one essential gene function.

22. (Currently amended) A bone graft comprising at least one first cell having at least one first exogenous nucleic acid encoding a vascular endothelial growth factor and at least one second cell having at least one second nucleic acid encoding at least one osteogenic

protein, wherein the vascular endothelial growth factor is selected from the group consisting of VEGF 121, VEGF 165, VEGFA 138, VEGFA 162, VEGF 182, VEGF 189, and VEGF-C.

23. (Previously presented) The bone graft of claim 22, wherein the osteogenic protein is selected from the group consisting of a bone morphogenic protein (BMP), a transforming growth factor (TGF), a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a fibroblast growth factor (FGF), an epidermal growth factor (EGF), a platelet-derived growth factor (PDGF), an insulin-like growth factor (IGF), a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

24. (Canceled)

25. (Previously presented) The bone graft of claim 22, which is an allograft.

26. (Previously presented) The adenoviral vector of claim 19, wherein the vascular endothelial growth factor is VEGF 121

27. (Previously presented) The bone graft of claim 22, wherein the vascular endothelial growth factor is VEGF 121.

28. (Canceled)

29. (Previously presented) The bone graft of claim 22, wherein the osteogenic protein is selected from the group consisting of BMP-2, BMP-3, BMP-4, BMP-5, BMP-6, BMP-7 and BMP-8.

30. (Previously presented) The bone graft of claim 22, wherein the osteogenic protein is TGF-β1.

31. (Previously presented) The bone graft of claim 22, wherein the osteogenic protein is BMP-2.

32. (Previously presented) The bone graft of claim 22, wherein the osteogenic protein is MK.

33. (Previously presented) The bone graft of claim 22, wherein the osteogenic protein is HBNF.

34.-37. (Canceled)

38. (Previously presented) The adenoviral vector of claim 19, wherein the osteogenic protein is selected from the group consisting of a bone morphogenic protein (BMP), a transforming growth factor (TGF), a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a fibroblast growth factor (FGF), an epidermal growth factor (EGF), a platelet-derived growth factor (PDGF), an insulin-like growth factor, a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

39. (Previously presented) The adenoviral vector of claim 19, wherein the osteogenic protein is selected from the group consisting of BMP-2, BMP-3, BMP-4, BMP-5, BMP-6, BMP-7 and BMP-8.

40. (Previously presented) The adenoviral vector of claim 19, wherein the osteogenic protein is TGF-β1.

41. (Previously presented) The adenoviral vector of claim 19, wherein the osteogenic protein is BMP-2.

42. (Previously presented) The adenoviral vector of claim 19, wherein the osteogenic protein is MK.

43. (Previously presented) The adenoviral vector of claim 19, wherein the osteogenic protein is HBNF.

44. (New) A method for enhancing bone density or formation, the method comprising administering to at least one first cell within a bone or within a tissue immediately

surrounding a bone an adenoviral vector comprising at least one first nucleic acid encoding a vascular endothelial growth factor, and administering to at least one second cell within the bone or within a tissue immediately surrounding the bone an adenoviral vector comprising at least one second nucleic acid encoding at least one osteogenic protein, wherein the osteogenic protein is selected from the group consisting of a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK), such that the first nucleic acid is expressed in the cell to produce the vascular endothelial growth factor, and the second nucleic acid is expressed in the cell to produce the osteogenic protein, whereby bone density or formation is enhanced within the region.

45. (New) The method of claim 44, wherein the vascular endothelial growth factor is selected from the group consisting of VEGF121, VEGF 165, VEGFA 138, VEGFA 162, VEGF 182, VEGF 189, and VEGF-C.

46. (New) The method of claim 44, wherein the osteogenic protein is MK.

47. (New) The method of claim 44, wherein the osteogenic protein is HBNF.

48. (New) The method of claim 44, wherein the adenoviral vector is exposed to at least one cell in vivo in the region of the bone.

49. (New) The method of claim 44, wherein the adenoviral vector is exposed to at least one cell ex vivo, which is then delivered in vivo to the region of the bone.

50. (New) The method of claim 44, wherein the first cell and the second cell are the same cell.

51. (New) The method of claim 44, wherein the first nucleic acid and the second nucleic acid are the same nucleic acid.

52. (New) An adenoviral vector comprising at least one first nucleic acid encoding a vascular endothelial growth factor and at least one second nucleic acid encoding at least one

osteogenic protein, wherein the osteogenic protein is selected from the group consisting of a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

53. (New) The adenoviral vector of claim 52, wherein the vascular endothelial growth factor is selected from the group consisting of VEGF 121, VEGF 165, VEGFA 138, VEGFA 162, VEGF 182, VEGF 189, and VEGF-C.

54. (New) The adenoviral vector of claim 52, wherein the osteogenic protein is MK.

55. (New) The adenoviral vector of claim 52, wherein the osteogenic protein is HBNF.

56. (New) The adenoviral vector of claim 52, which is deficient in at least one essential gene function.

57. (New) The adenoviral vector of claim 52, wherein the first nucleic acid and the second nucleic acid are the same nucleic acid.

58. (New) A bone graft comprising at least one first cell having at least one first exogenous nucleic acid encoding a vascular endothelial growth factor and at least one second cell having at least one second nucleic acid encoding at least one osteogenic protein, wherein the osteogenic protein is selected from the group consisting of a latent TGF binding protein (LTBP), latent membrane protein-1 (LMP-1), a heparin-binding neurotrophic factor (HBNF), growth and differentiation factor-5 (GDF-5), a parathyroid hormone (PTH), a growth factor receptor, a cytokine, a chemotactic factor, a LIM mineralization protein (LMP), a leukemia inhibitory factor (LIF), a hedgehog protein, and midkine (MK).

59. (New) The bone graft of claim 58, wherein the vascular endothelial growth factor is selected from the group consisting of VEGF 121, VEGF 165, VEGFA 138, VEGFA 162, VEGF 182, VEGF 189, and VEGF-C.

60. (New) The bone graft of claim 58, wherein the osteogenic protein is MK.

61. (New) The bone graft of claim 58, wherein the osteogenic protein is HBNF.

62. (New) The bone graft of claim 58, which is an allograft.